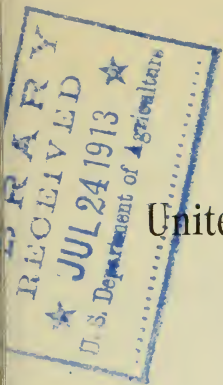


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Edition of July 22, 1913.

# United States Department of Agriculture,

## DIVISION OF PUBLICATIONS—Circular 14.

JOS. A. ARNOLD, Editor and Chief.

WASHINGTON, D. C., *June 25, 1913.*

### PUBLICATIONS OF THE BUREAU OF SOILS.

NOTE.—Application for publications in this list should be made to the Editor and Chief of the Division of Publications, United States Department of Agriculture, Washington, D. C. The editions of some of the publications are necessarily limited, and when the supply is exhausted and no funds are available for procuring additional copies, applicants are referred to the Superintendent of Documents, Government Printing Office, who has them for sale at a nominal price, under the law of January 12, 1895. Applicants are urgently requested to ask only for those publications in which they are particularly interested. The department can not undertake to supply complete sets, nor is it allowable to send more than one copy of any publication to an applicant.

#### REPORTS.

Report of the Chief for 1898.

Same, 1900.

Same, 1901.

Same, 1904.

Same, 1906.

#### REPORTS OF FIELD OPERATIONS.

Field Operations of the Bureau of Soils, First Report, 1899.

Same, Third Report, 1901.

Same, Fifth Report, 1903.

Same, Fourth Report, 1902.

#### BULLETINS.

[In applying for these bulletins the name of the bureau, as well as the number of the bulletin, should be given, as "Bureau of Soils, Bulletin No. 27."]

Bul. 27. Experiments in Growing Cuban Seed Tobacco in Texas.

29. Tobacco Investigations in Ohio.

37. Experiments in Growing Cuban Seed Tobacco in Alabama.

46. Improvement of Virginia Fire-Cured Tobacco.

58. The Composition of Commercial Fertilizers.

67. Fertilizers on Soils Used for Oats, Hay, and Miscellaneous Crops.

70. Some Effects of a Harmful Organic Soil Constituent.

73. Studies in Soil Oxidation.

77. Organic Compounds and Fertilizer Action.

81. A Report on the Natural Phosphates of Tennessee, Kentucky, and Arkansas.

82. The Effect of Soluble Salts on the Physical Properties of Soils.

83. A Beneficial Organic Constituent of Soils: Creatinine. Introduction: Importance of Beneficial Soil Constituents. I. The Isolation of Creatinine from Soils. II. The Origin of Creatinine in Soils. III. Effects of Creatinine on Growth and Absorption.

84. Modification of the Methods of Mechanical Soil Analysis.

86. Studies in Soil Catalysis.

88. Some Organic Soil Constituents.

89. The Chemistry of Steam-Heated Soils.

94. The Occurrence of Potassium Salts in the Salines of the United States.

## CIRCULARS.

[In applying for these circulars the name of the bureau, as well as the number of the circular, should be given, as "Bureau of Soils, Circular No. 10."]

- Circ. 10. The Use of Alkaline Waters for Irrigation.
16. Manurial Requirements of the Cecil Silt Loam of Lancaster County, S. C.
  24. Same, III. Portsmouth Sandy Loam.
  25. Same, IV. Sassafras Silt Loam.
  26. Examination of Soil Samples.
  27. Soils of the Eastern United States and Their Use—V. Cecil Sandy Loam.
  28. Same, VI. Cecil Clay.
  29. Same, VII. Hagerstown Loam.
  30. Same, VIII. Clarksville Silt Loam.
  31. Same, IX. Miami Clay Loam.
  32. Same, X. Marshall Silt Loam.
  33. Same, XI. Knox Silt Loam.
  34. Same, XII. Carrington Loam.
  35. Same, XIII. Memphis Silt Loam.
  36. Same, XIV. Fargo Clay Loam.
  37. Same, XV. Clyde Loam.
  38. Same, XVI. Dekalb Silt Loam.
  39. Same, XVII. Porters Loam and Porters Black Loam.
  40. Same, XVIII. Wabash Silt Loam.
  41. Same, XIX. Wabash Clay.
  42. Same, XX. Trinity Clay.
  44. Same, XXI. Norfolk Sand.
  45. Same, XXII. Norfolk Sandy Loam.
  46. Same, XXIII. Orangeburg Fine Sandy Loam.
  49. Same, XXVI. Houston Clay.
  50. Same, XXVII. Houston Black Clay.
  51. Same, XXVIII. Susquehanna Fine Sandy Loam.
  52. Soils of the San Luis Valley, Colorado.
  53. Soils of the Shenandoah River Terrace: A Revision of Certain Soils in the Albemarle Area, Virginia.
  54. Soils of the Eastern United States and Their Use—XXIX. The Crowley Silt Loam.
  55. Same, XXX. The Chester Loam.
  56. Same, XXXI. The Penn Loam.
  57. Same, XXXII. The Carrington Silt Loam.
  58. Same, XXXIII. The Carrington Clay Loam.
  59. Same, XXXIV. The Marion Silt Loam.
  60. Same, XXXV. The Volusia Loam.
  61. An Investigation of the Otero Basin, N. Mex., for Potash Salts.
  62. Report of a Reconnaissance of the Lyon Prospect, near Queen, N. Mex.
  63. Soils of the Eastern United States and Their Use—XXXVI. The Volusia Silt Loam.
  64. Same, XXXVII. The Hagerstown Clay.
  68. Same, XXXIX. Meadow.
  69. Same, XL. Marsh and Swamp.
  71. The Extraction of Potash from Silicate Rocks.
  72. Soil Survey of Payne Prairie, Gainesville Area, Florida.
  79. Soils of the Sutter Basin: A Revision in the Survey of Certain Soils in the Marysville Area, California.

## MISCELLANEOUS.

Soils of the Glacial and Loessial Province. (Reprint from Soils Bulletin 78.)  
 Descriptions of Soil Types Established and Changes in Classifications Since the  
 Publication of Bulletin 78.

## FARMERS' BULLETINS.

[The Farmers' Bulletins are a series of popular treatises issued by the Department of Agriculture. The following list includes only numbers contributed by the Bureau of Soils. They should be applied for by number, as "Farmers' Bulletin No. 88."]

- F. B. 88. Alkali Lands.  
 257. Soil Fertility.  
 266. Management of Soils to Conserve Moisture.  
 406. Soil Conservation.  
 421. The Control of Blowing Soils.  
 494. Lawns and Lawn Soils.

## SEPARATE REPRINTS FROM THE YEARBOOK.

[In applying for these publications the number of the separate should be given, as "Yearbook Separate No. 188."]

- Ybk. Sep. 188. Growth of the Tobacco Industry.  
 211. The World's Exhibit of Leaf Tobacco at the Paris Exposition of 1900.  
 516. Agriculture in the Coal Regions of Southwestern Pennsylvania.  
 526. The Agricultural Duty of Water.

## SOIL SURVEYS.

[In requesting these publications the full title should be given, as "Soil Survey, Autauga County, Ala., 1908."]

## ALABAMA.

1908. Autauga County.  
 1908. Bibb County.  
 1905. Blount County.  
 1908. Calhoun County.  
 1909. Chambers County.  
 1909. Coffee County.  
 1908. Colbert County.  
 1910. Dale County.  
 1909. Hale County.  
 1908. Henry County.  
 1911. Jackson County.  
 1906. Lee County.  
 1911. Madison County.  
 1907. Marion County.  
 1911. Marshall County.  
 1911. Mobile County.  
 1910. Pike County.  
 1911. Randolph County.  
 1911. Tuscaloosa County.

## ARIZONA.

1903. Solomonsville area (part of Graham County).  
 1902. Yuma area (parts of Yuma County).

## ARKANSAS.

1907. Conway County.  
 1903. Miller County.

## CALIFORNIA.

1907. Butte Valley soils (part of Siskiyou County).  
 1908. Pajaro Valley area (parts of Monterey and  
 Santo Cruz Counties).

## COLORADO.

1910. Uncompahgre Valley (parts of Delta and  
 Montrose Counties).

## CONNECTICUT.

1911. Windham County.

## FLORIDA.

1904. Gainesville area (parts of Alachua, Levy, and  
 Marion Counties).

## GEORGIA.

1911. Chatham County.  
 1911. Columbia County.  
 1904. Dodge County.  
 1903. Fort Valley area (parts of Macon and Houston  
 Counties).  
 1909. Franklin County.  
 1911. Glynn County.  
 1908. Grady County.  
 1909. Hancock County.  
 1909. Pike County.  
 1905. Spalding County.  
 1909. Tift County.  
 1910. Walker County.

## ILLINOIS.

- 1902. Clay County.
- 1903. Johnson County.
- 1903. Knox County.
- 1903. Sangamon County.
- 1902. St. Clair County.

## INDIANA.

- 1903. Allen County.
- 1904. Boonville area (parts of Warrick and Spencer Counties).
- 1906. Greene County.
- 1903. Madison County.
- 1907. Marion County.
- 1904. Marshall County.
- 1905. Newton County.
- 1902. Posey County.
- 1904. Scott County.

## IOWA.

- 1903. Cerro Gordo County.
- 1903. Story County.
- 1904. Tama County.

## KANSAS.

- 1904. Allen County.
- 1904. Garden City area (parts of Finney and Gray Counties).
- 1911. Reno County.
- 1906. Riley County.
- 1903. Russell area (part of Russell County).
- 1911. Shawnee County.
- 1902. Wichita area (parts of Sedgwick and Butler Counties).

## KENTUCKY.

- 1905. McCracken County.
- 1905. Madison County.
- 1903. Mason County.
- 1910. Rockcastle County.
- 1903. Scott County.

## LOUISIANA.

- 1903. Bienville Parish.
- 1903. East and West Carroll Parishes. }
- 1911. Iberia Parish.
- 1909. Lincoln Parish.
- 1907. Winn Parish.

## MAINE.

- 1903. Caribou area (part of Aroostook County).
- 1903. Orono area (part of Penobscot County).

## MARYLAND.

- 1909. Anne Arundel County.

## MASSACHUSETTS.

- 1911. Plymouth County.

## MICHIGAN.

- 1904. Alma area (part of Gratiot County).
- 1904. Owosso area (part of Shiawassee County).
- 1905. Oxford area (part of Oakland County).
- 1903. Pontiac area (part of Oakland County).
- 1904. Saginaw area (parts of Saginaw, Bay, Tuscola, and Huron Counties).

## MINNESOTA.

- 1906. Blue Earth County.
- 1906. Crookston area (part of Polk County).
- 1909. Rice County.

## MISSISSIPPI.

- 1910. Adams County.
- 1909. Clay County.
- 1903. Crystalsprings area (parts of Simpson and Copiah Counties).
- 1911. Forrest County.
- 1903. Holmes County.
- 1907. Jasper County.
- 1910. Lauderdale County.
- 1911. Lowndes County.
- 1903. Monroe County.
- 1910. Noxubee County.
- 1907. Oktibbeha County.
- 1906. Pontotoc County.
- 1907. Prentiss County.
- 1911. Wayne County.

## MISSOURI.

- 1909. Atchison County.
- 1903. Bates County.
- 1910. Cape Girardeau County.
- 1909. Cedar County.
- 1909. Cooper County.
- 1911. Franklin County.
- 1911. Laclede County.
- 1910. Marion County.
- 1910. Pemiscot County.
- 1911. Platte County.
- 1903. Scotland County.
- 1903. Shelby County.

## NEBRASKA.

- 1904. Kearney area (parts of Dawson, Buffalo, Phelps, Kearney, and Gosper Counties).
- 1906. Lancaster County.
- 1907. North Platte area (part of Lincoln County).

## NEVADA.

- 1909. Fallon area (parts of Lyon, Washoe, and Churchill Counties).

## NEW HAMPSHIRE.

- 1906. Merrimack County.
- 1909. Nashua area (part of Hillsboro County).

## NEW YORK.

- 1910. Monroe County.
- 1903. Montgomery County.
- 1910. Ontario County.
- 1909. Washington County.

## NORTH CAROLINA.

- 1910. Cabarrus County.
- 1903. Caswell County.
- 1907. Edgecombe County.
- 1909. Gaston County.
- 1910. Granville County.
- 1904. Greenville area, Tennessee (part of Madison County, N. C.).
- 1907. Henderson County.
- 1909. Lake Mattamuskeet area (part of Hyde County).
- 1910. Mecklenburg County.
- 1909. Pitt County.
- 1900. Raleigh to Newbern (parts of Craven, Jones, Wake, Johnston, Wayne, Greene, and Lenoir Counties).
- 1911. Richmond County.
- 1903. Robeson County.
- 1909. Scotland County.
- 1906. Transylvania County.



## NORTH DAKOTA.

- 1905. Carrington area (parts of Foster and Griggs Counties).
- 1907. McKenzie area (part of McKenzie County).
- 1906. Ransom County.

## OHIO.

- 1903. Ashtabula area (part of Ashtabula County).
- 1909. Auglaize County.
- 1905. Cleveland area (parts of Lorain, Summit, Cuyahoga, and Medina Counties).
- 1904. Coshocton County.
- 1906. Meigs County.
- 1900. Montgomery County.
- 1905. Westerville area (parts of Delaware, Franklin, Licking, Madison, and Union Counties).
- 1904. Wooster area (parts of Wayne, Stark, and Summit Counties).

## OREGON.

- 1909. Marshfield area (parts of Coos and Curry Counties).
- 1911. Medford area (part of Jackson County).

## PENNSYLVANIA.

- 1911. Bedford County.
- 1909. Berks County.
- 1911. Bradford County.
- 1910. Erie County.
- 1907. Johnstown area (parts of Cambria, Blair, and Bedford Counties).
- 1903. Lockhaven area (part of Clinton County).
- 1910. Washington County.

## PORTO RICO.

- 1902. Arecibo to Ponce.

## SOUTH CAROLINA.

- 1909. Anderson County.
- 1903. Campobello area (parts of Greenville and Spartanburg Counties).
- 1904. Charleston area (parts of Charleston and Colleton Counties).
- 1910. Clarendon County.
- 1909. Conway area (part of Horry County).
- 1902. Darlington area (Darlington County and part of Lee County).
- 1911. Georgetown County.
- 1907. Lee County.
- 1907. Oconee County.
- 1904. Orangeburg area (part of Orangeburg County).
- 1909. Saluda County.
- 1907. Sumter County.

## TENNESSEE.

- 1908. Coffee County.
- 1903. Davidson County.
- 1907. Giles County.
- 1906. Grainger County.
- 1904. Greeneville area (parts of Greene, Hawkins, Cocke, and Sullivan Counties, Tenn., and Madison County, N. C.).

## TENNESSEE—continued.

- 1904. Lawrence County.
- 1906. Madison County.
- 1908. Overton County.
- 1903. Pikeville area (parts of Van Buren, Bledsoe, Rhea, and Cumberland Counties).
- 1909. Sumner County.

## TEXAS.

- 1907. Bastrop County.
- 1908. Camp County.
- 1907. Cooper area (Delta and part of Lamar Counties).
- 1910. Ellis County.
- 1908. Franklin County.
- 1909. Grayson County.
- 1905. Lee County.
- 1909. Morris County.
- 1907. Robertson County.
- 1906. San Marcos area (parts of Hays, Guadalupe, Caldwell, and Bastrop Counties).
- 1909. Titus County.
- 1907. Wilson County.

## UTAH.

- 1904. Bear River area (part of Boxelder County).
- 1903. Provo area (part of Utah County).

## VIRGINIA.

- 1909. Campbell County.
- 1907. Montgomery County.

## WASHINGTON

- 1911. Quincy area (part of Grant County).

## WEST VIRGINIA.

- 1910. Clarksburg area (Harrison and Doddridge Counties).
- 1911. Huntington area (Cabell, Lincoln, and Wayne Counties).
- 1907. Middlebourne area (Marshall, Tyler, and Wetzel Counties).
- 1911. Morgantown area (Marion, Monongalia, and Taylor Counties).
- 1910. Point Pleasant area (Jackson, Mason, and Putnam Counties).
- 1909. Spencer area (Wirt, Calhoun, and Roane Counties).
- 1905. Upshur County.
- 1906. Wheeling area (all of Ohio, Brooke, and Hancock Counties and part of Marshall County).

## WISCONSIN.

- 1910. Bayfield area (part of Bayfield County).
- 1911. Fond du Lac County.
- 1910. Iowa County.
- 1905. Portage County.
- 1903. Viroqua area (parts of Monroe and Vernon Counties).
- 1910. Waukesha County.
- 1909. Waushara County.

## WYOMING.

- 1903. Laramie area (part of Albany County).

## RECONNOISSANCE SURVEYS.

1912. Georgia (Tattnall County).
1910. Western Kansas (Barber, Barton, Cheyenne, Clark, Comanche, Decatur, Edwards, Ellis, Finney, Ford, Gove, Graham, Grant, Gray, Greeley, Hamilton, Haskell, Hodgeman, Kearny, Kiowa, Lane, Logan, Meade, Morton, Ness, Norton, Osborne, Pawnee, Phillips, Pratt, Rawlins, Rooks, Rush, Russell, Scott, Seward, Sheridan, Sherman, Smith, Stafford, Stanton, Stevens, Thomas, Trego, Wallace, and Wichita Counties).
1911. Western Nebraska (Adams, Banner, Blaine, Boxbutte, Boyd, Brown, Buffalo, Chase, Cherry, Cheyenne, Custer, Dawes, Dawson, Deuel, Dundy, Frontier, Franklin, Furnas, Garden, Garfield, Gosper, Grant, Greeley, Hall, Harlan, Hayes, Hitchcock, Hooker, Holt, Howard, Kearney, Keith, Keyapaha, Kimball, Lincoln, Logan, Loup, McPherson, Morrill, Perkins, Phelps, Redwillow, Rock, Scotts Bluff, Sheridan, Sherman, Sioux, Thomas, Valley, Webster, and Wheeler Counties).
1910. South-Central Pennsylvania (Adams, Bedford, Blair, Cambria, Center, Clearfield, Cumberland, Franklin, Fulton, Huntingdon, Juniata, Mifflin, Perry, Snyder, Somerset, and Union Counties).
1911. Southwest Texas (Atascosa, Bexar, Dimmit, Frio, Kinney, La Salle, Live Oak, Maverick, McMullen, Uvalde, Wilson, and Zavalla Counties).
1910. Puget Sound Basin, Western Part, Washington (Island, Kitsap, San Juan, and Thurston Counties, and parts of Chehalis, Clallam, Jefferson, Lewis, Mason, and Pierce Counties).
1911. Southwestern Washington (parts of Lewis and Skamania Counties and all of Clarke, Cowitz, Pacific, and Wahkiakum Counties).
1909. Wisconsin (Marinette County).

Approved:

D. F. HOUSTON,

*Secretary of Agriculture.*





